

Amendments to the Specification:

[Para 4] U. S. pending patent application No. 10/707,291 discloses a ~~free-floating~~ ball valve positioned within a tapered check valve seat positioned at the leading end of a bailer. When the ~~free-floating~~ ball valve is fully seated within a the valve seat formed on an interior surface of the valve housing, liquid fluid within the hollow interior of the bailer is sealed within said hollow interior. When the ~~free-floating~~ ball valve is unseated from the valve seat, liquid fluid within the hollow interior of the bailer flows past the unseated ball valve and into a container positioned below the check valve seat to collect the liquid fluid.

[Para 6] The ~~free-floating~~ ball valve of the co-pending patent application depends at least to some extent from the bottom of the bailer. Accordingly, placing the bailer on a flat surface drives the ball valve upwardly into the valve housing so that the liquid fluid content of the bailer begins flowing out.

[Para 7] However, oxygen is introduced into the liquid fluid as it flows out of the bailer into a capturing device because the valve seat upon which the ~~free-floating~~ ball valve sits is spaced sufficiently far from the bottom of the check valve housing to form an annular air pocket around the ~~free-floating~~ ball valve. The oxygen in the air mixes with the liquid fluid content of the bailer during the emptying process, producing a false reading of the oxygen content of the liquid fluid.

[Para 8] An improved ~~free-floating~~ ball valve is therefore needed. The improved ball valve would substantially eliminate all oxygen contact with the liquid fluid as said liquid fluid is emptied from the bottom of the check valve.

[Para 9] However, in view of the prior art considered as a whole at the time the present invention was made, it was not obvious to those of ordinary skill in the pertinent art how the art could be advanced to provide a bottom-emptying bailer having a ~~free-floating~~ ball valve that eliminates oxygen entry into the liquid at the time of bailer decanting.

[Para 10] The long-standing but heretofore unfulfilled need for a bottom-emptying bailer having a ~~free-floating~~ ball valve that serves as a check valve that prevents oxygen from contacting liquid fluid drained from the bailer during a bottom-emptying procedure is now met by a new, useful, and nonobvious invention.

[Para 11] The novel bailer valve housing includes a cylindrical trailing end adapted for engagement with a cylindrical main body of a bailer. The valve housing has a leading end with

tapered sidewalls. A ~~free-floating~~ ball valve is disposed in the valve housing and an annular valve seat is formed in the leading end. The annular valve seat is formed flush with a leading edge of the leading end and the ~~free-floating~~ ball valve has a diameter only slightly greater than a diameter of the annular valve seat.

[Para 12] Accordingly, about half of the ~~free-floating~~ ball valve extends downwardly from the leading edge of the valve housing. Liquid fluid in the valve housing is therefore captured within the valve housing when the ~~free-floating~~ ball valve is fully seated in the annular valve seat. The liquid fluid captured within the valve housing occupies all of the valve housing. More specifically, the liquid fluid wets the part of the ~~free-floating~~ ball valve that is in inside the valve housing and the liquid fluid is flush with the leading edge of the valve housing. This prevents formation of an air pocket between the liquid fluid and the leading edge of the valve housing.

[Para 13] The liquid fluid is drained from the valve housing when the ~~free-floating~~ ball valve is unseated from the annular check valve. The liquid fluid does not encounter oxygen during the draining process because the flush positioning of the annular valve seat with the leading edge of the valve housing prevents formation of an air pocket at the leading edge.

[Para 23] ~~Free-floating-ball~~ Ball valve 18 is a check valve. It is unseated to admit liquid fluid into the hollow interior 20 of valve housing 10 and hence into the undepicted hollow interior of the bailer when the bailer enters into liquid fluid. Ball valve 18 is seated on annular valve seat 22 to prevent leakage of liquid fluid from said hollow interior when the bailer is retrieved from the liquid fluid.

[Para 24] Annular air pocket 24 is formed at the leading end of valve housing 10. The oxygen in this air pocket contaminates the liquid content of the bailer when ~~free-floating~~ ball valve 18 is unseated from valve seat 22.

[Para 25] Novel valve housing 10a is depicted in Fig. 2. As in the prior art structure of Fig. 1, novel valve housing 10a includes cylindrical trailing part 12 and a leading end 14 having tapered sidewalls. Annular shoulder 16 is formed where cylindrical trailing part 12 meets leading end 14.

[Para 26] ~~Free-floating-ball~~ Ball valve 18 is a check valve. It is unseated to admit liquid fluid into the hollow interior 20 of valve housing 10 and hence into the undepicted hollow interior of the bailer when the bailer enters into liquid fluid. Ball valve 18 is seated on annular

valve seat 22a to prevent leakage of liquid fluid from said hollow interior when the bailer is retrieved from the liquid fluid.

[Para 27] Significantly, annular valve seat 22a is positioned flush with the leading end of valve housing 10a and the diameter of ~~free-floating~~ ball 18 is made only slightly greater than the diameter of valve seat 22a so that the lower half of ball 18 extends downwardly from the leading edge of said valve housing. Valve seat 22a has a wedge shape when seen in section as depicted in Fig. 2. It extends radially inwardly from the leading edge of leading end 14 and decreases in width from a relatively wide radially outermost end to a point-like radially innermost end that contacts ball 18, forming a thin annular contact about the circumference of said ball valve 18. Annular air space 24 in the prior art valve housing is therefore eliminated in the novel valve housing. Accordingly, when ~~eheck~~ ball valve 18 is pressed against a flat table top or other flat barrier, liquid within the hollow interior of the bailer is drained therefrom without contacting said annular air pocket and thus is not contaminated with oxygen.